REMARKS

Claims 1 to 11 are now pending in the application. This amendment adds new claims 9 to 11.

Submitted herewith is the combined declaration of Christoph Leinemann and Thomas Heidermann under 37 C.F.R. §1.132. Both Christoph Leinemann, the named inventor of this application, and Dr. Heidermann are qualified experts in their field, and their declaration is being submitted to rebut the Examiner's rejections of the claims.

In the Office Action mailed December 4, 2008, the Examiner repeated his rejection of claims 1 to 8 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1–9 of U.S. Patent No. 7,241,137 to Leinemann et al. This rejection is again respectfully traversed.

As set out in the declaration of the named inventor, Christoph Leinemann and Dr. Heidermann, U.S. Patent 7,241,137 to Leinemann et al. is drawn to a flame arrestor having a disk structure comprising multiple concentric rings having two types of gas passages, wide (17) and narrow (18) and which are arranged in an alternate pattern in the radial direction (see Abstract, claim 1, and column 3, lines 56-60). The aim of this arrangement is that the narrower gas passages cause a higher flow velocity which results in increased cooling compared with the wider gas passages which guarantee a sufficient flow volume due to a smaller flow resistance but cause a lower flow velocity, thereby increasing the temperature. The flame burning at the end of the gap of the flame filter directly in contact with the filter represents the critical thermal load of a flame arrester for endurance burning. The gas velocity in the gap which causes this critical load is considered as critical velocity. However, the critical velocity depends on the width of the gap. If a flame filter has differently defined and particularly arranged gaps, the maximum thermal load only occurs either at the smaller or at the wider gaps, but never simultaneously. In comparison with conventional flame filters with equal gaps, the flame filter with defined different gaps

is never loaded critically to its full extent. This leads to clearly improved flashback prevention at endurance burning. U.S. Patent 7,241,137 thus relies on proper matching between the two types of gaps which have different sized passages.

Christoph Leinemann and Dr. Heidermann point out in their declaration that the invention claimed in the subject application is related to a permanent fireproof flame guard (often referred to as an "endurance burning flame arrester") claps gaps for the gas flow which are, in a radial direction, interrupted by at least one solid annular section having no gaps. A section having no gaps is quite different from a section having "smaller" gaps which cause higher flow velocity. It is the expert opinion of Christoph Leinemann and Dr. Heidermann that it should be clear that the ideas behind U.S. Patent 7,241,137 and the present application are completely different because in a solid annular section without any gaps there can be no high flow velocity. In contrast to U.S. Patent 7,241,137, the section of the claimed invention having no gaps is used for cooling where the cooling effect is caused by the higher thermal conductivity of the material forming the annular section without gaps, e.g., solid metal. The so called "cooling ring" within the flame arrester is not able to contribute to the heating of the flame arrester element as the gas is not going through the cooling ring and therefore no flame can burn on it and heat it. The cooling ring draws the heat off the flame-faced filters with gaps on which the flame is burning. The cooling ring leads the drawn heat from the flame filter to the surrounding by convection and radiation. This energy discharge to the surrounding the cooling ring is able to absorb continuously used energy from the flame filter.

Claims 1–8 were again rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,179,608 to Kraemer et al. This rejection is also respectfully traversed.

As set out in the declaration of the named inventor, Christoph Leinemann and Dr. Heidermann, Kraemer et al. disclose a swirl velocity component with an integral flashback arresting capability which is made of two pieces, i.e., multiple channel monoliths which can be configured differently and are made as an assembly or as two

parts with a gap between both. These structural features make the Kraemer et al. device different from the claimed device. Further, nowhere is the flow cross section of the Kraemer et al. device (see Figures 1 and 3) shown to be configured with at least one solid annular section without passage gaps on both sides of which are annular sections having passage gaps as is required in claim 1 of the subject application. For this reason, claim 1 and all of its dependent claims are not anticipated by Kraemer. In addition, with reference to claim 2, it is erroneous to conclude the Kraemer et al. device shows the cross sectional area with the passage gaps being greater than the cross-sectional area without passage gaps since nowhere in Kramer et al. is there shown an annular section without the passage gaps. Similarly, with respect to claims 5, since Kraemer lacks an annular section without passage gaps, it also lacks a plurality of annular sections without passage gaps. With respect to claim 3, Kraemer does not show both a solid core and an annular section with no passage gaps.

With reference to page 4 of the Office Action, the Examiner states at the top of the page that Kraemer et al. has "at least one concentric annular section (60, and the solid-line separations between each concentric gapped ring) is formed so as to be solid without the passage gaps, and regardless of size *would* dissipate heat in the concentric region within the flow section" (emphasis the Examiner's). The Examiner in commenting on claim 4 states that "Kraemer et al discloses that the concentric section (60) is formed *possibly of a highly thermally conductive material*" (emphasis added), citing column 8, lines 11 and 12. Then, in his comments with respect to claim 5, the Examiner states "shown in Figure 5 [of Kraemer et al.] is a plurality of annular sections are provided as concentric sections (75), which, although not drawn to any significant gauges, are solid, which are, in each case followed in the radial direction by flame guard arrangements with passage gaps (21)."

Christoph Leinemann and Dr. Heidermann state in their declaration that it is obviously wrong to refer to hub 60 as a solid annular section in the sense of claim1 because there is no annular section with passage gaps on both sides of hub 60. Christoph Leinemann and Dr. Heidermann state in their declaration that it is also

obviously a misrepresentation of the hub 60 as "possibly of a highly thermally conductive material", since the correct quote at column 8, lines 11 and 12 is "A solid hub is fabricated from solid round stock of an appropriate material" (emphasis added). Moreover, at line 44 of column 8, the hub 60 is described as being "optional". Christoph Leinemann and Dr. Heidermann state in their declaration that, obviously, there is an annular section with passage gaps only on one side, namely radially outwards from hub 60. Additionally, the Examiner referred to the solid-line separations 75 (see Figure 3) between each concentric gap ring of Kraemer et al., suggesting that these might be interpreted as solid annular sections. The solid-line separations 75 represent the smooth band which is in a usual way spirally wound up together with a corrugated band (76) in order to produce the well-known flame arrester having the flame extinguishing gaps. The smooth band (75) is necessary for establishing gaps of a defined size. Therefore, the smooth band is part of the gaps which cannot be performed in a stable and well-defined manner by the corrugated band without the smooth band. Therefore, it is not possible to regard the smooth band as a concentric solid annular section having no passage gaps. With respect to claim 6, there is no suggestion in Kraemer to wind the smooth metal strip directly, i.e., without the intermediate corrugated strip, on itself, in order to perform the annular concentric section without gaps by means of several windings of the smooth strip or band.

A key feature of the claimed invention is the provision of at least one concentric section of highly thermally conductive material that subdivides the flow cross section into a plurality of annular flow areas. This concentric section is formed as a solid without passage gaps and serves to limit impermissible heating in the radial inner region of the flame guard. Christoph Leinemann and Dr. Heidermann performed experimental tests which are reported in their declaration. These tests demonstrate the basis on which they have reached their conclusions as reported in their declaration.

By this amendment, new claims 9–11 have been added. Support for those claims are found in the specification, particularly at pages 7 and 8, and Figure 6 of the drawings. These claims are, line claims 1–8, clearly patentable for the same reasons

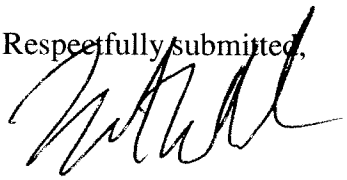
advanced above.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1 to 11 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



Michael E. Whitham
Reg. No. 32,635

Whitham, Curtis, Christofferson & Cook, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA 20190

Tel. (703) 787-9400
Fax. (703) 787-7557

Customer No.: 30743